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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,668	01/24/2000	Anand G. Dabak	TI-30020	6120
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TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			WILLIAMS, LAWRENCE B	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/489,668

Applicant(s)

DABAK ET AL.

Examiner

Lawrence B. Williams

Art Unit

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-25 and 28-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10, 13-25 and 28 is/are allowed.
- 6) ☒ Claim(s) 29-52 is/are rejected.
- 7) ☒ Claim(s) 35, 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 10 January 2006 have been fully considered but they are not persuasive.
2. In response to applicant's arguments, the recitation "according to a Bluetooth<sup>TM</sup> modified frequency hopping sequence" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Therefore the rejections of claims 29-52 are maintained as cited in the previous office action.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by Miyake et al. (US Patent 6,678,341 B1).

Miyake et al. discloses in Fig. 1, a method of communicating with a remote

Art Unit: 2638

communication circuit (18a, 18b), comprising the steps of: transmitting a first plurality of data signals to the remote communication circuit on a first sequence of respective frequencies; and receiving a second plurality of data signals from the remote communication circuit on the first sequence of respective frequencies (col. 5, lines 33-44).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al. (US Patent 6,678,341 B1) in view of Acampora et al. (System Applications for Wireless Indoor Communications).

(1) With regard to claim 30, as noted above, Miyake et al. disclose all limitations of claim 29. Miyake et al. does not however explicitly each wherein the remote transmitter transmit each data signal of the second plurality of data signals from a plurality of antennas.

However, Acampora et al. discloses a communication circuit wherein the remote transmitter transmits each data signal of the second plurality of data signals from a plurality of antennas (pg. 13, col. 2, lines 31-36). Acampora et al discloses that multiple antennas could be used at the remote during selection diversity.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teaching of Acampora et al. with the invention of Miyake et al. as a method of implementing antenna element and selection diversity at the remote.

(2) With regard to claim 31, Acampora et al. also discloses wherein each data signal of the second plurality of data signals is multiplied by a weighting coefficient corresponding to a respective antenna of the plurality of antennas, and wherein each said weighting coefficient has a value corresponding to a received signal strength at the respective antenna (pg. 14, col. 2, lines 12-24). Acampora et al. discloses the use of adaptive transmission, which is well known method in the art (also disclosed by applicant, pg. 8, lines 8-16). It would have been obvious to one skilled in the art at the time of invention to incorporate the method to maximize the signal to noise ratio at the receiver.

(3) With regard to claim 32, Acampora et al. also discloses wherein each data signal of the second plurality of data signals is multiplied by a weighting coefficient corresponding to a respective antenna of the plurality of antennas, and wherein a first weighing coefficient corresponding to a first antenna of the plurality of antennas has a value of one and a second weighting coefficient corresponding to a second antenna of the plurality of antennas has a value of zero (pg. 13, col. 2, lines 9-17). Acampora et al. discloses the use of switched or selection diversity which is well known method in the art (also disclosed by applicant, pg. 8, lines 8-16). It would have been obvious to one skilled in the art at the time of invention to incorporate the method to maximize the signal to noise ratio at the receiver.

Art Unit: 2638

7. Claims 33-34, 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al. (US Patent 6,678,341 B1) as applied to claim 29 above, and further in view of Haartsen (US Patent 6,590,928 B1).

(1) With regard to claim 33, as noted above, Miyake et al. disclose all limitations of claim 14, above. Miyake et al. does not however teach wherein the communication circuit is arranged to form a piconet with at least another communication circuit.

However, Haartsen discloses in Fig. 6a, wherein a communication circuit is arranged to form a piconet with at least another communication circuit.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Haartsen with the invention of Miyake et al. to provide a method of connecting devices wirelessly and making optimal use of allocated spectrum (col. 4, lines 15-17).

(2) With regard to claim 34, Haartsen also discloses wherein the first plurality of data signals comprises an identification signal that identifies at least one communication circuit (col. 13, lines 60-66). It would have been obvious to one skilled in the art at the time of invention to incorporate the method to distinguish devices on the network.

(3) With regard to claim 37, Haartsen also discloses wherein the remote communication circuit is a master and wherein a slave receives the second plurality of data signals (col. 13, lines 60-66) as a method implementing an inquiry procedure. It would have been obvious to one skilled in the art at the time of invention to use the second plurality of signals as an inquiry and identification message for each device connected a particular piconet in the network (col. 12, lines 41-44).

(4) With regard to claim 38, Haartsen also discloses wherein the second plurality of data signals is produced by one of a cordless phone base station, a local area network access point, a computer, and a bridge to other networks (col. 14, lines 37-52). It would have been obvious to one skilled in the art at the time of invention to incorporate the method to use for connecting to a source unit to a bridge unit (col. 15, lines 28045).

(5) With regard to claim 39, Haartsen also discloses wherein the first plurality of data signals is produced by one of a cordless phone handset, a cell phone, a personal digital assistant, a digital camera, and a computer peripheral (col. 13, lines 64-65). It would have been obvious to one skilled in the art at the time of invention to use the first plurality of signals to identify each of these slave devices and its class of service.

(6) With regard to claim 40, Haartsen also discloses wherein the computer peripheral is one of a printer, signals comprises a scanner, a fax machine, and another computer (col. 13, lines 64-65). It would have been obvious to one skilled in the art to incorporate the mentioned devices in the network since they are common devices in use today.

8. Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora et al. (System Applications for Wireless Indoor Communications) in view of Miyake et al. (US Patent 6,678,341 B1).

(1) With regard to claim 41, Acampora et al. discloses in Fig. 5, a method of communicating with a remote communication circuit, comprising the steps of: receiving a first data signal from a plurality of antennas on a respective frequency; calculating a respective weighting coefficient corresponding to each antenna of the plurality of antennas; multiplying a

second data signal by the respective weighting coefficient of said each antenna, thereby producing a respective second weighted data signal corresponding to said each antenna; and transmitting each said respective second weighted data signal at the corresponding said each antenna of the plurality of antennas on the respective frequency (pg. 14, 2<sup>nd</sup> col. , lines 12-24). Both Acampora et al. and Applicant's Admitted Prior art (pg. 8, lines 8-16) inherently disclose **adaptive transmission**, which is well known method of adjusting transmission power of antennas.

Acampora et al. does not however disclose receiving the first data signal from a plurality of antennas on a respective frequency of a frequency hopping pattern and transmitting each said respective second weighted data signal at the corresponding said each antenna of the plurality of antennas on the respective frequency.

However, Miyake et al. discloses in Fig. 1, a transmitter (12) transmitting on a respective transmit frequency in a predetermined sequence of transmit frequencies and a receive circuit (14) receiving from a remote transmitter (18a, 18b) on the respective transmit frequency in the predetermined sequence (col. 5, lines 32-42).

It would have been obvious to one skilled in the art at the time of invention to apply the method of Miyake et al. to the invention of Acampora et al. as a method of providing a multi mode communication terminal capable of terminal to terminal communication without any infrastructure equipment (col. 2, lines 9-34).

(2) With regard to claim 42, though Acampora et al. does not explicitly disclose wherein the plurality of antennas are spaced apart by at least 2 centimeters and by no more than 15 centimeters, he does teach that with appropriately space antennas there is less probability of all



Art Unit: 2638

multiple antennas all in a fade (pg. 13, col. 2, lines 2-8). It would be a design choice for one skilled in the art to choose a suitable spacing for the antennas for his/her need.

(3) With regard to claim 43, Acampora et al. also discloses, wherein the plurality of antennas consists of two antennas (pg. 13, col. 2, lines 20-23). It would have been obvious to one skilled in the art at the time of invention to use two antennas for diversity in order to maximize the signal to noise ratio at the receiver.

9. Claims 44- 49, 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora et al. (System Applications for Wireless Indoor Communications) in view of Miyake et al. (US Patent 6,678,341 B1) as applied to claim 41 above, and further in view of Haartsen (US Patent 6,590,928 B1).

(1) With regard to claim 44, as noted above, Acampora et al. in combination with Miyake et al. disclose all limitations of claim 41, above. They do not however teach wherein the communication circuit is arranged to form a piconet with at least another communication circuit.

However, Haartsen discloses in Fig. 6a, wherein a communication circuit is arranged to form a piconet with at least another communication circuit.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Haartsen with the invention of Acampora et al. in combination with Miyake et al. to provide a method of connecting devices wirelessly and making optimal use of allocated spectrum (col. 4, lines 15-17).

(2) With regard to claim 45, Miyake et al. also discloses wherein the remote communication circuit is a slave device (Fig. 1, element 10 (master), elements 18a, 18b (slaves)).

It would have been obvious to one skilled in the art at the time of invention to use the method to organize and control activity within the network.

(3) With regard to claim 46, Haartsen also discloses wherein the first data signal includes an identification signal that identifies the remote communication circuit (col. 13, lines 60-66). It would have been obvious to one skilled in the art at the time of invention to use the method of identifying itself and its function.

(4) With regard to claim 47, Haartsen also discloses wherein the remote communication circuit is one of a cordless phone handset, a cell phone, a personal digital assistant, a digital camera, and a computer peripheral (col. 13, lines 64-65). It would have been obvious to one skilled in the art at the time of invention to use the remote communication circuit to act as master to control communications between itself and also between the slave devices (cell phone, headset, digital camera).

(5) With regard to claim 48, Haartsen also discloses wherein the computer peripheral is one of a printer, signals comprises a scanner, a fax machine, and another computer (col. 13, lines 64-65). It would have been obvious to one skilled in the art to incorporate the mentioned devices in the network since they are common devices in use today.

(6) With regard to claim 49, Haartsen also discloses wherein the second plurality of data signals is produced by one of a cordless phone base station, a local area network access point, a computer, and a bridge to other networks (col. 14, lines 37-52). It would have been obvious to one skilled in the art at the time of invention to use the second plurality of signals to enable master devices to permit bridge configurations.

Art Unit: 2638

(7) With regard to claim 51, Acampora et al. discloses wherein the step of calculating comprises setting each said respective weighting coefficient corresponding to each antenna of the plurality of antennas to a value proportional to a value of the first data signal from each said antenna (pg. 14, col. 2, lines 12-24; also disclosed by applicant, pg. 8, lines 8-16).

(8) With regard to claim 52, Acampora et al. also discloses wherein the step of calculating comprises setting a first weighting coefficient corresponding to a first antenna of the plurality of antennas has a value of one and a second weighting coefficient corresponding to a second antenna of the plurality of antennas has a value of zero (pg. 13, col. 2, lines 9-17).

Acampora et al. discloses the use of switched or selection diversity which is well known method in the art (also disclosed by applicant, pg. 8, lines 8-16.) used for calculation of weight coefficients for transmission.

10. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Acampora et al. (System Applications for Wireless Indoor Communications) in view of Miyake et al. (US Patent 6,678,341 B1) and further in view of Ottersten et al. (US Patent 5,828,658).

As noted above, Acampora et al. in combination with Miyake et al. disclose all limitations of claim 41, above. They do not however disclose multiplying the first data signal by the respective weighting coefficient of each said antenna, thereby producing a respective first weighted data signal corresponding to said each antenna; and summing each said respective first weighted data signal corresponding to said each antenna, thereby producing a received signal.

However, Ottersten et al. also discloses multiplying the first data signal by the respective weighting coefficient of each said antenna, thereby producing a respective first weighted data

Art Unit: 2638

signal corresponding to said each antenna; and summing each said respective first weighted data signal corresponding to said each antenna, thereby producing a received signal (col. 13, line 55 - col. 14, line 62). It would have been obvious to one skilled in the art at the time of invention to apply the method of Ottersten et al. to the invention of Acampora et al. in combination with Miyake et al. as a method improving signal quality in both the base station and remote.

*Allowable Subject Matter*

11. Claims 1-10, 13-25, 28 are allowed.

12. Claims 35-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:  
The instant application discloses a communication circuit designed with a signal processing circuit arranged to produce a first plurality of data signals and receive a second plurality of data signals. A search of prior art records has failed to disclose a communication circuit comprising a timing circuit coupled to receive an initial value corresponding to a predetermine time, the timing circuit arranged to produce a first control signal in response to receiving the identification signal within the predetermined time and arranged to produce a second control signal in response to not receiving the identification signal within the predetermined time as disclosed in claims 1 and 14. Nor does the prior teach producing a first control signal in response to receiving the identification signal received within a

Art Unit: 2638

predetermine time; and producing a second control signal in response to not receiving the identification signal received within a predetermined time as disclosed in claim 35.

### *Conclusion*

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

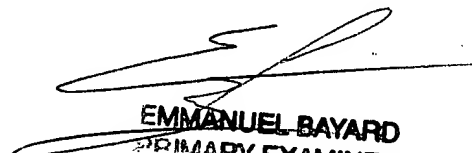
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2638

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
March 11, 2006



**EMMANUEL BAYARD**  
PRIMARY EXAMINER